

CLAIMS

1. A method of managing mobility comprising:

a home agent determining step for a mobile terminal, having communications with an access point apparatus arranged on a subnet
5 configuring a domain network and moving between the subnets and the domain networks different in service form, to carry out location management of the mobile terminal;

a step for the mobile terminal to register a main home address given from the main home agent apparatus to a server for
10 managing an address of an apparatus to have a connection to the domain network; and

a sub-home address registering step for the main home agent apparatus, when the mobile terminal moves to another domain network different in service form, to register as a care of address
15 a sub-home address for use on a moved-in domain network.

2. A method of managing mobility according to claim 1, wherein the mobile terminal previously stores information about a home agent apparatus to become a candidate for the main home agent apparatus.

20 3. A method of managing mobility according to claim 1, further comprising a step for the mobile terminal to acquire the information about a home agent apparatus to become a candidate for the main home agent apparatus from the domain network.

4. A method of managing mobility according to claim 2,
25 further comprising a step for the mobile terminal to acquire the information about a home agent apparatus to become a candidate

for the main home agent apparatus from the domain network.

5 5. A method of managing mobility according to claims 1, wherein, in the home agent determining step, the mobile terminal changes over, as required, the main home agent apparatus from the information about a home agent apparatus.

6. A method of managing mobility according to claims 2, wherein, in the home agent determining step, the mobile terminal changes over, as required, the main home agent apparatus from the information about a home agent apparatus.

10 7. A method of managing mobility according to claims 3, wherein, in the home agent determining step, the mobile terminal changes over, as required, the main home agent apparatus from the information about a home agent apparatus.

15 8. A method of managing mobility according to claims 1, wherein, in the home agent determining step, the mobile terminal determines the main home agent apparatus from the information about a home agent apparatus, on the basis of a preference as one of the information.

20 9. A method of managing mobility according to claims 2, wherein, in the home agent determining step, the mobile terminal determines the main home agent apparatus from the information about a home agent apparatus, on the basis of a preference as one of the information.

25 10. A method of managing mobility according to claims 3, wherein, in the home agent determining step, the mobile terminal determines the main home agent apparatus from the information

about a home agent apparatus, on the basis of a preference as one of the information.

11. A method of managing mobility according to claims 1, wherein, in the home agent determining step, the mobile terminal
5 determines the main home agent apparatus from the information about a home agent apparatus, on the basis of an access frequency to the home agent apparatus.

12. A method of managing mobility according to claims 2, wherein, in the home agent determining step, the mobile terminal
10 determines the main home agent apparatus from the information about a home agent apparatus, on the basis of an access frequency to the home agent apparatus.

13. A method of managing mobility according to claims 3, wherein, in the home agent determining step, the mobile terminal
15 determines the main home agent apparatus from the information about a home agent apparatus, on the basis of an access frequency to the home agent apparatus.

14. A method of managing mobility according to claims 1, further comprising a registration request step of making a request
20 for a registration to the home agent apparatus arranged in a domain network to be connected through a link layer, placed in an effective state at an opportunity of capable of acquiring an IP address, of link layers possessed by the mobile terminal at least one of which turns from a non-effective state into an effective
25 state, wherein, the sub-home address registering step is carried out when the registration request is granted by the home agent

apparatus.

15. A method of managing mobility according to claims 2, further comprising a registration request step of making a request for a registration to the home agent apparatus arranged in a domain
5 network to be connected through a link layer, placed in an effective state at an opportunity of capable of acquiring an IP address, of link layers possessed by the mobile terminal at least one of which turns from a non-effective state into an effective state, wherein, the sub-home address registering step is carried
10 out when the registration request is granted by the home agent apparatus.

16. A method of managing mobility according to claims 3, further comprising a registration request step of making a request for a registration to the home agent apparatus arranged in a domain
15 network to be connected through a link layer, placed in an effective state at an opportunity of capable of acquiring an IP address, of link layers possessed by the mobile terminal at least one of which turns from a non-effective state into an effective state, wherein, the sub-home address registering step is carried
20 out when the registration request is granted by the home agent apparatus.

17. A method of managing mobility according to claims 5, further comprising a registration request step of making a request for a registration to the home agent apparatus arranged in a domain
25 network to be connected through a link layer, placed in an effective state at an opportunity of capable of acquiring an IP

address, of link layers possessed by the mobile terminal at least one of which turns from a non-effective state into an effective state, wherein, the sub-home address registering step is carried out when the registration request is granted by the home agent apparatus.

18. A method of managing mobility according to claims 7, further comprising a registration request step of making a request for a registration to the home agent apparatus arranged in a domain network to be connected through a link layer, placed in an effective state at an opportunity of capable of acquiring an IP address, of link layers possessed by the mobile terminal at least one of which turns from a non-effective state into an effective state, wherein, the sub-home address registering step is carried out when the registration request is granted by the home agent apparatus.

19. A method of managing mobility according to claims 11, further comprising a registration request step of making a request for a registration to the home agent apparatus arranged in a domain network to be connected through a link layer, placed in an effective state at an opportunity of capable of acquiring an IP address, of link layers possessed by the mobile terminal at least one of which turns from a non-effective state into an effective state, wherein, the sub-home address registering step is carried out when the registration request is granted by the home agent apparatus.

20. A mobile terminal comprising:

a main home agent selecting section for selecting a main home agent apparatus to ask location management and making a request for registering a home address given from the main home agent apparatus to a server for managing an address of an apparatus
5 to be connected to the domain network;

a mobile IP processing section for notifying, when moved to a domain network different in service form, a sub-home agent apparatus for asking location management on a moved-in domain network of a home address for use on the moved-in domain network
10 together with a care of address for use on a subnet of within the moved-in domain network, on the basis of a mobile IP protocol;
and

a home agent registering section for notifying the main home agent apparatus of the main home address and a sub-home address
15 for use on the moved-in domain network.

21. A mobile terminal according to claim 20, further comprising a home domain storing section for storing a home agent list as information about a home agent apparatus to become a candidate for the main home agent apparatus, wherein the main home
20 agent selecting section selects a main home agent apparatus from the home agent list.

22. A mobile terminal according to claim 21, wherein the main home agent selecting section acquires information about a home agent apparatus from the domain network and store it to the
25 home domain storing section.

23. A mobile terminal according to claim 21, wherein the

main home agent selecting section changes over, as required, the main home agent apparatus from the home agent list stored in the home domain storing section.

24. A mobile terminal according to claim 22, wherein the
5 main home agent selecting section changes over, as required, the main home agent apparatus from the home agent list stored in the home domain storing section.

25. A mobile terminal according to claim 21, wherein the
10 main home agent selecting section selects the main home agent apparatus from the home agent list stored in the home domain storing section, on the basis of a priority as one of information about a home agent apparatus.

26. A mobile terminal according to claim 22, wherein the
15 main home agent selecting section selects the main home agent apparatus from the home agent list stored in the home domain storing section, on the basis of a priority as one of information about a home agent apparatus.

27. A mobile terminal according to claim 21, wherein the
20 main home agent selecting section selects as the main home agent apparatus a home agent apparatus having an access frequency equal to or greater than a predetermined value from the home agent list stored in the home domain storing section.

28. A mobile terminal according to claim 22, wherein the
25 main home agent selecting section selects as the main home agent apparatus a home agent apparatus having an access frequency equal to or greater than a predetermined value from the home agent list

stored in the home domain storing section.

29. A mobile terminal according to any of claims 20, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through a link layer
5 turned from a non-effective state into an effective state so that, when receiving a grant for the registration request by the sub-home agent apparatus, started is a notification of a sub-home address to the main home agent apparatus.

30. A mobile terminal according to any of claims 21, wherein
10 the home agent registering section makes a request for registration to a sub-home agent apparatus through a link layer turned from a non-effective state into an effective state so that, when receiving a grant for the registration request by the sub-home agent apparatus, started is a notification of a sub-
15 home address to the main home agent apparatus.

31. A mobile terminal according to any of claims 22, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through a link layer turned from a non-effective state into an effective state so that,
20 when receiving a grant for the registration request by the sub-home agent apparatus, started is a notification of a sub-home address to the main home agent apparatus.

32. A mobile terminal according to any of claims 23, wherein the home agent registering section makes a request for
25 registration to a sub-home agent apparatus through a link layer turned from a non-effective state into an effective state so that,

when receiving a grant for the registration request by the sub-home agent apparatus, started is a notification of a sub-home address to the main home agent apparatus.

33. A mobile terminal according to any of claims 25, wherein
5 the home agent registering section makes a request for registration to a sub-home agent apparatus through a link layer turned from a non-effective state into an effective state so that, when receiving a grant for the registration request by the sub-home agent apparatus, started is a notification of a sub-
10 home address to the main home agent apparatus.

34. A mobile terminal according to any of claims 27, wherein the home agent registering section makes a request for registration to a sub-home agent apparatus through a link layer turned from a non-effective state into an effective state so that,
15 when receiving a grant for the registration request by the sub-home agent apparatus, started is a notification of a sub-home address to the main home agent apparatus.

35. A mobile terminal according to claims 20, wherein the mobile IP processing section, when receiving a multi-encapsulated
20 packet, takes a source address described in an innermost header as a destination of registering location.